No. 02-1251

Supreme Court, U.S.
APR 25 2003
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IN THE

Supreme Court of the United States

EVELYN HEINRICH and HENRY M. SIENKEWICZ, JR.,
Petitioners,

v.

ELIZABETH DUTTON SWEET and FREDERICK H. GREIN, JR., Representatives of the Estate of WILLIAM H. SWEET, M.D., and MASSACHUSETTS GENERAL HOSPITAL,
Respondents.

ON PETITION FOR A WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE FIRST CIRCUIT

BRIEF IN OPPOSITION FOR RESPONDENTS ELIZABETH DUTTON SWEET AND FREDERICK H. GREIN, JR., REPRESENTATIVES OF THE ESTATE OF WILLIAM H. SWEET, M.D.

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QUESTION PRESENTED FOR REVIEW

When stripped of argumentation and reduced to its essence, the question presented by the petitioners is whether the court of appeals misapplied a rule of law that it properly stated — the standard of appellate review dictated by Fed. R. Civ. P. 50 and the case law pertinent to it — when it held that the evidence at trial was insufficient for a reasonable jury to find in the petitioners' favor on their negligence and wrongful death claims against William H. Sweet, M.D. and Massachusetts General Hospital.

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The opinion of the court of appeals (Pet. App. 1a-35a) is reported at 308 F.3d 48. The district court issued five published opinions, reported at: (1) 44 F. Supp. 2d 408; (2) 49 F. Supp. 2d 27; (3) 62 F. Supp. 2d 282; (4) 83 F. Supp. 2d 214; and (5) 118 F. Supp. 2d 73 (Pet. App. 36a-72a).

STATEMENT OF THE CASE

A. The Medical Background.

This action was brought in 1995 by the survivors of two patients who died in 1961. Both suffered from glioblastoma multiforme, which is the commonest, and the deadliest, form of brain cancer. It is especially difficult to treat surgically because the tumor consists of a main tumor mass with fingerlets of cancer cells infiltrating the healthy brain tissue surrounding the main tumor. These fingerlets are well vascularized and multiply rapidly. JA 3938. Untreated, or treated with conventional therapy (craniotomy and radiation), glioblastomas are invariably fatal. Survival times are measured in months. JA 4153.

The decedents were participants in clinical trials of a treatment called boron neutron capture therapy ("BNCT"). The theory of BNCT evolved from the discovery that two distinct moieties, boron-10 (B^{10}) and thermal neutrons, each innocuous by itself in the doses used, would interact to produce a highly localized nuclear reaction. JA 2828-29. BNCT involves the injection of a compound containing boron-10 into the blood-stream supplying the brain, where it is taken up by tumor tissue but not by normal brain tissue. JA 2939-40. The tumor is then exposed to a slow neutron beam generated by a nuclear reactor. Slow neutrons are low in energy and do not normally harm tissue. JA 2831. When the neutron beam encounters a boron-10 atom, however, the atom "captures" an additional neutron. The nucleus is de-stabilized and immediately undergoes a fission reaction, destroying the surrounding cells. JA 2956. The mass and the charges of the particles created by the fission preclude them

from traveling more than the approximate diameter of a single cell. JA 2829, 2939, 2956-60. In theory, then, BNCT is a way to deliver highly energetic and highly localized radiation that destroys tumor cells while sparing normal brain tissue. JA 2828-31, 2939, 2956-60, 3897. Whereas tumor tissue is some 10 to 20% more sensitive to conventional radiation than healthy tissue, BNCT promised an advantage of some 400%. JA 1858-59, 1984-87.

BNCT was a lifelong research interest of William H. Sweet, M.D., the late chief of neurosurgery at Massachusetts General Hospital ("MGH"). JA 1813. William Herbert Sweet was born on February 10, 1910 in Washington State. JA 1807. He was about 50 years old at the time that he treated the petitioners' decedents, Eileen Sienkewicz and George Heinrich. He was 85 years old when plaintiffs filed suit in 1995, and was almost 90 years old when the case was tried in September 1999. By that time, his mental faculties had declined to the point that he could not testify, a fact of which the trial judge refused to apprise the jury. JA 500-02, 1121, 1814-15. Dr. Sweet died on January 22, 2001. JA 0043.

Dr. Sweet first participated in BNCT trials at Brookhaven National Laboratories in 1950-51, the results of which had been disappointing.[1] While no patient suffered serious complications and about half the patients seemed to recover following BNCT, the recoveries proved short-lived, and all patients died of their cancers. JA 2969-71. Dr. Sweet and other researchers believed the reasons were that: (1) the radiation dose delivered by the Brookhaven reactor was too low to treat even shallow tumors; (2) the radiation was in the form of highly thermal neutrons, which have relatively low tissue penetration; and (3) an optimal boron compound remained to be found. *Id.*

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1. The Complaint was amended to add claims on behalf of decedents Joseph Mayne and Walter Van Dyke, who participated in the Brookhaven BNCT trials. These claims were dismissed prior to trial, a decision that was not appealed.

A research reactor located at the Massachusetts Institute of Technology ("MIT") in Cambridge, Massachusetts, became operational in 1958. JA 4023-24. The MIT reactor was capable of delivering a much higher neutron flux, or flow rate, than the Brookhaven reactor, and was constructed with a fully functioning surgical operating facility directly below it. In anticipation of clinical trials of BNCT, MIT physicists worked on various aspects of the neutron beam, including methods for measuring the decrease in neutron flux as the neutrons passed through tissue and were "captured" by boron-10 atoms. Formulae were developed to predict, from boron concentration and neutron flux, the amount of radiation delivered to the tumor. JA 1992-95.

At MGH, meanwhile, Dr. Sweet's team undertook extensive animal studies to evaluate more than 145 boron compounds; the six compounds with the most promising results in animal studies were then tested at low doses in 200 human subjects to determine which achieved the best concentration in tumor with minimal toxicity. JA 1851, 2231-45, 2270-73, 2336-39, 3908-13, 3984-86. Dr. Sweet's team also built on the research of others, including quantitative studies of the effects of ionizing radiation on monkeys, rabbits, and mice; of the effects of slow neutrons on mice and swine; and of the destruction of animal tumors using BNCT. JA 3901-02.

By 1960, there had been various modifications to BNCT which appeared to address the problems encountered in the Brookhaven trials. For the first time, Dr. Sweet would have the use of a reactor capable of delivering a high enough neutron flux. Several promising boron compounds — one extremely so — had been developed and tested, and appeared ready for use. JA 2972-75. A new series of clinical trials of BNCT was thus set to begin at the MIT reactor. In each case, a conventional craniotomy would be performed to establish the diagnosis and to remove as much tumor mass as possible. JA 3914. An interval of several weeks would then be allowed for the blood-brain barrier in surrounding healthy tissue to rebuild prior to BNCT treatment. *Id.* The operating room below the MIT reactor would

permit a follow-up craniotomy at the time of irradiation so that neutron radiation could be delivered directly to the tumor.

Mrs. Sienkewicz was Patient No. 1 in the MIT series. JA 2866, 2977, 3916, 6371. In June 1960, she was diagnosed with a glioblastoma multiforme. JA 6368-69. She was discharged from MGH following a conventional craniotomy, but became increasingly lethargic and depressed over the summer, suffered from nervousness and insomnia, and began fumbling for words. JA 6370, 6376-80. According to her medical records, Mrs. Sienkewicz reported that she "just [sat] around at home feeling that everything is hopeless," "[felt] that life [was] no longer worth living," and that "thoughts of death [were] with her all the time." JA 6370, 6377, 6379.

Mrs. Sienkewicz was readmitted to MGH on November 13, 1960, and underwent BNCT on November 15. JA 6365. Her lethargy worsened at first, but two days later she began to improve until she became as alert and responsive as she had been preoperatively. JA 6370-71. Her depression continued, however, and became worse after her discharge on December 3. JA 6375. Electroshock therapy the first week of January produced marked improvement in her mood ("very cheerful, and up and about doing her housework at home"). JA 6372.

In late February 1961, she developed a sudden left-sided headache, weakness of the right limbs, increased difficulty with speech, and double vision, and so was hospitalized at MGH again. Her speech improved spontaneously and she was "alert and pleasant" the following day. She was discharged on March 4, 1961 with minimal aphasia (language impairment) and "no definite diagnosis of recurrent tumor." JA 6372.

Over the summer of 1961, Mrs. Sienkewicz became increasingly disoriented, nervous, insomniac, aphasic, and depressed. JA 6414. She was admitted to MGH in August 1961 because of nervousness, headaches, nausea and vomiting. A scan suggested recurrent tumor. JA 6365. In September 1961, she was again admitted to MGH because of continuing

headaches, lethargy, insomnia, aphasia, depression, and a suicide gesture. A scan showed a "definite abnormality" in the region of the tumor. She continued to deteriorate, eventually lapsing into a coma. She died on October 31, 1961, eighteen months from her diagnosis and nearly a year after undergoing BNCT. JA 6365-66.

George Heinrich, age 35, was Patient No. 6 in the series. JA 2882. He had been diagnosed with a glioblastoma multiforme following a craniotomy on October 25, 1960. JA 6082, 6305. Despite radiation treatments, the tumor recurred within a few weeks, with bulging evident at the surgical site. JA 6097, 6123, 6127, 6305. He was readmitted for further evaluation from December 4 to 8, electing to go home for the holidays and come back for a second surgery. JA 6095, 6129-30. He returned to MGH on December 11, however, with increased swelling and a blind spot in his left eye. JA 6129-30. On December 15 his craniotomy site was reopened and a massively recurrent tumor excised. JA 6305. He went home feeling well on December 24 (JA 6128), but by the morning of January 2, 1961 the surgical wound became separated and inflamed and he was admitted for further evaluation. A staph infection was treated with antibiotics and subsided. JA 6305-06.

Mr. Heinrich received BNCT at MIT on January 18, 1961. JA 2882. At that point in time, Eileen Sienkewicz had made a good recovery following her BNCT; her tumor had not reappeared, and her depression had resolved.[2]

Around February 10, 1961, Mr. Heinrich became increasingly lethargic, aphasic, and nonresponsive. JA 6306.

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2. Of the four intervening BNCT patients: Patient 2 was not irradiated because the tumor was too far advanced; Patient 3 (BNCT 11/30/60) had made a satisfactory recovery but would die of meningitis six weeks after treatment; Patient 4 (BNCT 12/30/60, a melanoma patient) had recurrences in other areas of the body, and would die after five months; and Patient 5 (BNCT 1/6/61) showed no apparent improvement and died at two months. JA 2977, 3916.

A brain scan on April 11 showed a definite abnormality in the region of his tumor, and by early May the surgical site was tense again. *Id.* His downward course continued, and he was transferred to a nursing home on May 15, 1961, where he died twelve days later. JA 6307, 6314.

Sixteen patients received BNCT (one patient twice) in the initial trial at the MIT reactor between November 1960 and August 1961.[3] Initial results — notably, Mrs. Sienkewicz's "strikingly improved" condition after BNCT, and her long survival time — induced "cheerful optimism" for awhile among Dr. Sweet and his team. JA 3915. As time went on, however, the results grew steadily more discouraging, with average survival times roughly the same as with conventional therapies then available. Half of the patients died within six months after irradiation, and none lived a full year. No one yet knew why. "Tentatively," Dr. Sweet concluded in October 1961, "we can say that we have not given enough radiation to tumor cells." JA 3986.

Much later, neuropathology provided some clues to the outcome. In a conference paper delivered in 1964 and published in 1972, the University of California's Dr. Arthur Asbury presented the findings of his microscopic analysis of brain tissue from fourteen of the MGH-MIT patients. In all cases studied, the cause of death was "cerebral in nature": extensive radiation necrosis in nine (including Sienkewicz and Heinrich); recurrent tumor in two; combined recurrence and radiation necrosis in one; and one case each of intracranial hemorrhage and acute

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3. A second series began soon after, using a newly developed boron compound, which appeared to offer significant advantages: it concentrated well in tumor tissue, and its low toxicity permitted it to be administered in higher doses than previous compounds. Unexpectedly, the first two patients worsened after BNCT. The first lived just three months, and the second died in two weeks, apparently of radiation effects. JA 3915, 3918. Improved dosimetry revealed that Patient 2 had received twice the radiation expected. Dr. Sweet halted this trial after just two patients. JA 3915.

bacterial meningitis. JA 0844, 2832-38, 2851-52. Particularly striking were the findings of inflammation and eventual scarring and thickening of the walls of cerebral blood vessels of all sizes. JA 2833-38, 2849-52. To the authors of the published paper — Dr. Sweet among them — this "raise[d] the suspicion that boron may have sequestered in vessel walls, resulting in selectively high doses of radiation to those structures." JA 2850. This was the first the Sweet team knew of or suspected this problem. JA 1903-04, 2282-83, 2286-88, 2349.

In a frank self-assessment published in 1964, Dr. Sweet and his team described the 1960-61 trials as "singularly unsuccessful," and attributed their failure to "four deficiencies": failure to appreciate how boron acted in the body, and "specifically . . . the need to clear it from the cerebral bloodstream"; inadequate knowledge of boron chemistry; inadequate methods for optimizing the shape of the neutron beam; and the lack of the equipment needed for accurate measurements of neutron radiation dose. JA 2935.

Though he remained a passionately interested observer, the 1960-61 series were Dr. Sweet's last clinical trials of BNCT. Researchers at other locales, however, built on his work, with some successes. Most notable was Dr. Hiroshi Hatanaka, who had become interested in BNCT while working with Dr. Sweet as a post-doctoral student at MGH. In clinical trials in Japan between 1968 and 1989, Dr. Hatanaka's team achieved five-year survival rates with BNCT that were far greater than with conventional therapy: 19% overall, and 58% in patients with tumors 6 cm deep or less. JA 0824-25, 2961, 2982-92. The defendants offered, but the district court excluded, additional evidence of ongoing work with BNCT. JA 1076-79, 1082-83, 2342-45.

B. The Litigation.

In 1995, representatives of the estates of George Heinrich and Eileen Sienkewicz filed an eleven-count class action complaint in the United States District Court for the Eastern

District of New York, asserting claims of: (i) violation of constitutional and civil rights under the Bivens rule; (ii) civil fraud; (iii) battery; (iv) intentional infliction of emotional distress; (v) strict liability for inherently dangerous activities; (vi) personal injury caused by exposure to toxic substances; (vii) absence of informed consent; (viii) wrongful death; (ix) "civil responsibility for crimes against humanity;" (x) negligence; and (xi) negligent misrepresentation. The case eventually found its way to Chief Judge William G. Young of the United States District Court for the District of Massachusetts. Judge Young issued three lengthy, published opinions prior to trial dealing with various aspects of this complex case.[4]

The jury heard evidence over fourteen days beginning on September 10, 1999. During the trial, the plaintiffs called two

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4. In *Heinrich ex rel. Heinrich v. Sweet*, 44 F. Supp. 2d 408 (D. Mass. 1999) ("*Heinrich I*"), the district court denied the United States' motion to dismiss, holding that the plaintiffs' administrative claims were timely. In *Heinrich ex rel. Heinrich v. Sweet*, 49 F. Supp. 2d 27 (D. Mass. 1999) ("*Heinrich II*"), the district court ruled that in view of the permissive transfer from the Eastern District of New York, New York law would govern the state-law claims, and ordered further briefing on New York statutes of limitations. The district court also held that the federal claims were timely; and dismissed on substantive grounds the counts for battery, intentional infliction of emotional distress, strict liability, toxic substances, and crimes against humanity. In *Heinrich ex rel. Heinrich v. Sweet*, 62 F. Supp. 2d 282 (D. Mass. 1999) ("*Heinrich III*"), the court held that under the Price-Anderson Act, 42 U.S.C. §§ 2014(q) and (hh) and 2210(n)(2) and (s), each plaintiff's BNCT claim was subject to the limitations rules and substantive law of the state where the "nuclear incident" — radiation injury at a licensed nuclear reactor — occurred. It thus dismissed as untimely all claims except those premised on BNCT in Massachusetts (all claims governed by New York law were time-barred). The district court deemed Heinrich's and Sienkewicz's decades-old BNCT claims timely because in the court's view, "Massachusetts imposes a fiduciary duty on doctors to disclose known possible causes of action to patients," and because the court applied retroactively a 1989 statute enacting a discovery rule for wrongful death actions.

expert witnesses whose testimony was relevant to the negligence and wrongful death counts: Larry Junck, a neurologist and neuro-oncologist, and Michael Grodin, a medical ethicist.

Dr. Junck based his opinions on documents that he received exclusively from plaintiffs' counsel, including patient charts and medical literature. JA 982, 1084-86. In his view, the defendants acted "inappropriately and irresponsibly" in administering boron injections and BNCT to Eileen Sienkewicz and George Heinrich. JA 985-86. He was not asked, and did not say, whether the defendants deviated from the applicable standard of care. Moreover, he admitted that he could not say whether BNCT hastened the death of either patient (i.e., that either died sooner from the effects of BNCT than (s)he would have if treated conventionally or not at all); he characterized any attempt to opine on that point as "hypothetical," with "no basis." JA 1116, 1129.

Dr. Grodin talked mostly about informed consent, which the plaintiffs claimed Dr. Sweet had failed to obtain from his patients; the jury ultimately found for Dr. Sweet and MGH on that claim. JA 177-79. Dr. Grodin also testified that a physician or institutional review board considering human trials should engage in a risk/benefit analysis, and that, in his view, the risks of BNCT outweighed the potential benefits. JA 1376-83, 2407-08. Like Dr. Junck, Dr. Grodin did not testify that BNCT violated any standard of care, either in 1961 or presently, of the average qualified neurosurgeon or of anyone else engaged in clinical trials.

There were three defense experts: Drs. Laws and Fager, both neurosurgeons, and Dr. Koski, an anesthesiologist who at the time of trial was Director of Human Research Affairs for Partners Healthcare System. They testified that Dr. Sweet's conduct in the BNCT trials complied with the standard of care for the average qualified neurosurgeon in 1960-61 and with the prevailing norms for human clinical trials. JA 2130-35, 2197-98, 2363-67. Dr. Sweet did not testify, as his age (89) and medical

condition had rendered him incompetent. He died on January 22, 2001, shortly after his 91st birthday.

On defense motions for judgment as a matter of law, the court dismissed the fraud and negligent misrepresentation claims, and sent to the jury the claims for absence of informed consent, wrongful death, and negligence. The jury returned a verdict for MIT on all counts; for Dr. Sweet and MGH on the informed consent count; but for the plaintiffs against Dr. Sweet and MGH on the negligence and wrongful death counts. It awarded compensatory and punitive damages.

Dr. Sweet and MGH filed a motion for new trial, a renewed motion for judgment as a matter of law, and a motion for reduction of the jury award. In *Heinrich ex rel. Heinrich v. Sweet*, 118 F. Supp. 2d 73 (D. Mass. 2000) ("*Heinrich V*"), the district court granted the motions for reduction of the jury award, on the ground that the court should have applied the Massachusetts wrongful death statute as in effect in 1960-61, when the treatment and deaths occurred, rather than the 1995 version. This had the effect of reducing the damages award by nearly ninety percent. The court otherwise denied the post-trial motions. Dr. Sweet, MGH and the plaintiffs all appealed.

In an opinion issued on August 27, 2002, the Court of Appeals for the First Circuit vacated the judgment altogether, holding that judgment should have been entered for Dr. Sweet and MGH as a matter of law because plaintiffs had failed to present legally sufficient evidence to support their negligence and wrongful death claims: "Conclusory opinions, unattached to predicate evidence of existing standards, cannot fairly fill the void." Pet. App. 35a.

REASONS FOR DENYING THE PETITION

A. The Question Presented By The Petitioners Is Simply Whether The Court Of Appeals Correctly Applied A Rule Of Law That It Properly Stated, And As Such Does Not Warrant This Court's Review.

Petitioners have made no sincere attempt to explain why this case merits the Court's attention. They argue throughout their brief that the court of appeals deprived them of their right to a jury trial, but they do not explain how this case differs in principle from any of the myriad other cases in which federal trial and appeals courts measure the evidence presented to juries by the legal sufficiency standard of Fed. R. Civ. P. 50(a)(1). The reason that the petitioners fail to explain is that no such difference exists, and their true complaint is fact-based and case-specific.

"The Supreme Court is not, and never has been, primarily concerned with the correction of errors in lower court decisions." *Boag v. MacDougall*, 454 U.S. 364, 368 (1982) (Rehnquist, J., dissenting) (*quoting* Address of Chief Justice Vinson before the American Bar Association, Sept. 7, 1949, as quoted in R. Stern & E. Gressman, Supreme Court Practice 258 (5th ed. 1978)). Its function, rather, is "to resolve conflicts of opinion on federal questions that have arisen among lower courts, to pass upon questions of wide import under the Constitution, laws, and treaties of the United States, and to exercise supervisory power over the lower federal courts." *Id.*

The court of appeals' decision does not conflict with any decision of this Court or of any other court of appeals. The decision at issue has no "importance to the public as distinguished from that of the parties." *Layne & Bowler Corp. v. Western Well Works, Inc.*, 261 U.S. 387 (1923). Moreover, petitioners' assertion that the court of appeals misstated the applicable standard is not true.

Petitioners acknowledge, as they must, that "[a] petition for a writ of certiorari is rarely granted when the asserted error

consists of erroneous factual findings or the misapplication of a properly stated rule of law." S. Ct. R. 10. *See* Pet. Br. at 6. They have attempted to overcome this considerable obstacle by claiming that the court of appeals has announced a new standard for appellate review of the trial court's denial of a motion for judgment as a matter of law. Pet. Br. at 6-7.

The fact of the matter is that the court of appeals accurately and succinctly described the law governing its role:

> We review de novo a district court's denial of a Rule 50 motion for judgment as a matter of law. But "our review is weighted toward preservation of the jury verdict," *Rodowicz*, 279 F.3d at 41, and "we must affirm unless the evidence was 'so strongly and overwhelmingly' inconsistent with the verdicts that no reasonable jury could have returned them," *Walton v. Nalco Chem. Co.*, 272 F.3d 13, 23 (1st Cir. 2001) (*quoting Negron v. Caleb Brett U.S.A., Inc.*, 212 F.3d 666, 668 (1st Cir. 2000)).

Pet. App. 14a.

Petitioners charge that this description "is at odds with the teachings of this Court, the other circuits and the Commonwealth of Massachusetts," and allegedly leaves the court of appeals free to ignore evidence and "substitute its own conclusions for those of the jury." Pet. Br. at 7. That claim is demonstrably false. The court of appeals broke no new ground in this case; the standard it followed is well-settled and entirely consistent with this Court's decisions.

One of the cases that the court of appeals cited in the present case as authority for the applicable standard was *Walton v. Nalco Chemical Co.*, 272 F.3d 13 (1st Cir. 2001). In *Walton*, the court stated (in addition to the language quoted in the present case, as set forth above):

> Judgments entered as a matter of law are reviewed *de novo*, and will be affirmed "only if, after

> scrutinizing the proof and inferences derivable therefrom in the light most hospitable to [the plaintiff], we determine that a reasonable factfinder could have reached but one conclusion: that [the defendant] w[as] entitled to judgment."

Walton, 272 F.3d at 18, *quoting Fleet National Bank v. Anchor Media Television, Inc.*, 45 F.3d 546, 552 (1st Cir. 1995). That language is indistinguishable in meaning from the language that the petitioners themselves urged upon the court of appeals as the correct articulation of the standard it should apply in its review: "The district court may grant a motion for judgment notwithstanding the verdict only upon its determination that the evidence could lead a reasonable person to only one conclusion." *Plaintiffs-Appellees' Consolidated Brief in Opposition to Briefs of Defendants-Appellants William H. Sweet, M.D. and Massachusetts General Hospital*, at 4-5, *Heinrich ex rel. Heinrich v. Sweet*, 308 F.3d 48 (1st Cir. 2002), *quoting Nydam v. Lennerton*, 948 F.2d 808, 810 (1st Cir. 1991). Saying that the jury's verdict could only be upended if the evidence was so "'strongly and overwhelmingly' inconsistent with the verdicts that no reasonable jury could have returned them,'" as the court of appeals did here, is no different. What petitioners are now engaging in is "little more than semantic gamesmanship, rooted in a faulty premise." *Veranda Beach Club Ltd. v. Western Surety Co.*, 936 F.2d 1364, 1382 (1st Cir. 1991).

In *Reeves v. Sanderson Plumbing Products, Inc.*, 530 U.S. 133 (2000), this Court observed that "in entertaining a motion for judgment as a matter of law, the court should review all of the evidence in the record." *Reeves*, 530 U.S. at 150. Petitioners contend that because the court of appeals did not include a repetition of that well-known directive, the court failed to heed it. Silent the court might have been, but an examination of its thorough opinion compels the conclusion that it *did* consider all of the evidence. The court found, for instance, that "[t]here is *no evidence at all* in the record that BNCT hastened decedents' deaths." Pet. App. 17a (emphasis added). Even a casual reading

of the court's opinion reveals that the court thoroughly examined the evidence that petitioners proffered in support of their claims, and found it lacking. *See* Pet. App. 23a-30a.

Petitioners also claim that the court of appeals' recitation of the standard of review was "silent" about its obligation to defer to inferences the jury could have made in their favor. Pet. Br. at 11. They argue, for instance, that the jury was free to *infer* that BNCT hastened the decedents' deaths in spite of their own expert's testimony that it was impossible to tell.[5] The court of appeals said it best:

> [I]n a medical malpractice case in which plaintiff argues that the treatment, not the terminal disease, hastened the death, and all of the expert testimony is that it *cannot* be said that the treatment hastened the death, a jury is *not* free to reach a contrary conclusion. Whether such a treatment ultimately hastened a patient's death is not a topic of common experience; it requires expert testimony.

Pet. App. 16a-17a (emphasis added).[6]

B. The Court Of Appeals Correctly Applied The Proper Rule Of Law In Finding That Petitioners Failed To Present Legally Sufficient Evidence In Support Of Their Claims.

1. Petitioners Were Required, But Failed, To Present Expert Testimony Establishing That Dr. Sweet Breached The Applicable Standard Of Care.

In Massachusetts, the standard for medical malpractice liability is firmly established:

> The proper standard is whether the physician, if a general practitioner, has exercised the degree of care

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5. Pet. Br. at 22.

6. Petitioners also contend that they were not required to prove that BNCT hastened their decedents' deaths. This is discussed more fully below.

> and skill of the average qualified practitioner, taking into account the advances in the profession. In applying this standard it is permissible to consider the medical resources available to the physician as one circumstance in determining the skill and care required. Under this standard some allowance is thus made for the type of community in which the physician carries on his practice.
>
> One holding himself out as a specialist should be held to the standard of care and skill of the average member of the profession practicing the specialty, taking into account the advances in the profession. And, as in the case of the general practitioner, it is permissible to consider the medical resources available to him.

Brune v. Belinkoff, 235 N.E.2d 793, 798 (Mass. 1968) (citations omitted). "Taking into account the advances in the profession" means that the physician's conduct must be measured against the standard of care prevalent at the time of the alleged malpractice. *See, e.g., Haggerty v. McCarthy*, 181 N.E.2d 562, 565-66 (Mass. 1962); *Shu v. Eisenklam*, 585 N.E.2d 757, 759 (Mass. App. Ct.), *review denied*, 590 N.E.2d 195 (Mass. 1992) ("the standard of care of an average pediatrician in 1984"); *Albee v. Glesmann*, 503 N.E.2d 677, 679 (Mass. App. Ct.), *review denied*, 507 N.E.2d 1056 (Mass. 1987) ("[Y]ou are to look to the standard of care and skill in 1979, not the standard of care and skill in May, 1985").

For the jury to assess whether the defendants possessed the requisite knowledge of nuclear physics, chemistry, and medicine to proceed with innovative brain tumor therapy according to the standards prevalent in 1961 required expert testimony as to what those standards were and how the defendants' conduct deviated from them, if at all. "It is only in exceptional cases that a jury instructed by common knowledge and experience may without the aid of expert medical opinion determine

whether the conduct of a physician toward a patient is violative of the special duty which the law imposes as a consequence of this particular relationship." *Forlano v. Hughes*, 471 N.E.2d 1315, 1319 (Mass. 1984) (citation omitted). Were this a case of a surgeon leaving a foreign object in the patient, for example, the jury's "common knowledge and experience" could suffice. *Haggerty*, 181 N.E.2d at 565.

As the court of appeals found, the insufficiency of the plaintiffs' expert testimony on these points was fatal to their negligence and wrongful death claims.[7] The court of appeals did not review the admissibility of any expert testimony, as petitioners contend, and it said so expressly: "For purposes of this appeal, we assume that the district court did not abuse its discretion in qualifying any of the medical experts to testify, including Dr. Junck and Dr. Grodin." Pet. App. 23a. It found, rather, that in the case of both Dr. Junck and Dr. Grodin, the testimony

> was not tied to the time period in question, it did not state the standard of care or that Sweet had violated the standard of care, and it depended heavily on information about BNCT that became available to Dr. Sweet and his team only after the completion and analysis of the trials.

Pet. App. 26a-27a.

Dr. Junck expressed his opinions in strictly personal terms, untethered to any standard of care (let alone the relevant, 1961 standard). Calling a course of treatment "irresponsible," "inappropriate," and the like, as Dr. Junck did, does not establish a departure from the requisite standard of care, particularly where that standard was so far removed — in time and in subject matter — from the experience of the testifying expert that it cannot be said to have been "implicit" in his opinions. Dr. Junck's research into the state of the art of clinical trials in neurosurgery in 1961,

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7. The court of appeals summarized the shortcomings in plaintiffs' standard of care evidence at Pet. App. 34a.

which formed the basis for his opinion that Dr. Sweet's conduct was "inappropriate and irresponsible," consisted of reading medical journal articles about BNCT provided him by plaintiffs' counsel — a methodology he conceded he would not consider adequate for his own research. There was no indication that he did any research into the professional standards of the day governing clinical trials.[8] Dr. Grodin said nothing on the subject of standards in 1960-61 at all.

Petitioners' hyperbolic description of the results of the clinical trials as "horrific" and excoriation of the court of appeals' decision as "indefensible moral error" ignores the fact that clinical trials are an indispensable part of medical research. They claim (at page 16 of their Petition) that the jury should be permitted to infer that the standard of care had been breached simply because the BNCT team later realized that they had failed to fully appreciate how boron would act in the body. To permit such a leap, without the guidance of expert testimony, would be tantamount to ruling that the failure of new treatment modalities to cure those otherwise incurably ill patients who agree to participate in a clinical trial constitutes *per se* negligence.

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8. Petitioners suggest that the court of appeals took a narrow view of the applicable standard of care as that governing "standard treatment within the specialty of neurosurgery," without reference to clinical trials. Pet. Br. at 19. To the contrary, the court of appeals observed that "the determination of the standard of care owed by Dr. Sweet to the decedents must be influenced by . . . the fact that in treating the decedents he was also conducting medical research for a new treatment." Pet. App. 21a. The court recounted in detail Dr. Koski's testimony describing the painstaking scientific review process to which Dr. Sweet's proposal to conduct BNCT trials was subjected before it was approved by MGH and MIT. According to the court, "[a]pproval by these various committees is very compelling evidence to show that the BNCT trials complied with the prevalent standard of care at the time." Pet. App. 30a-31a.

It is quite apparent from the court's thorough discussion of the expert testimony that Dr. Sweet offered during his portion of the case that the court of appeals did not "limit[] its review to evidence received in Plaintiffs' case-in-chief," as petitioners complain. Pet. Br. at 27.

2. The Court Of Appeals Correctly Found No Admissions Or Other Legally Sufficient Evidence To Support A Finding Of Negligence.

Petitioners make much of "admissions" and "concessions" they claim were made by Dr. Gordon Brownell, an MIT physicist, and Dr. Albert Soloway, a chemist, both of whom worked with Dr. Sweet on the BNCT trials, but neither of whom were parties to the litigation.[9]

In all but the most exceptional cases, a doctor's breach of the standard of care must be established through expert testimony. *Forlano*, 471 N.E.2d at 1319. In some cases, the jury may also be aided by "evidentiary admission[s], which, if believed, [are] independently sufficient to justify a finding of negligence. . . ." *Collins v. Baron*, 467 N.E.2d 171, 174 (Mass. 1984). Petitioners now argue that even if their experts failed to carry them across the bar, Dr. Sweet's negligence might have been established by certain "admissions." "Testimony concerning conclusory admissions by a malpractice defendant may suffice to sustain a jury's finding of negligence if, from the admission, the jury 'could infer an acknowledgement of all the necessary elements of legal liability.'" *Collins*, 467 N.E.2d at 173 (*quoting Zimmerman v. Litvich*, 7 N.E.2d 437, 438 (Mass. 1937)). That did not happen.

Petitioners have cited no "admissions" attributable to Dr. Sweet that reasonably might be construed to support a finding of negligence. Nor do any of Dr. Sweet's writings, in which he forthrightly disclosed what he and the rest of the BNCT team had learned from the MIT BNCT trials, contain anything to suggest that he felt it had been negligent to proceed in the first place. To the contrary, the evidence was that the team members believed that they had found suitable boron compounds, that their estimates of the radiation dose would be accurate based on animal studies, and that the therapy held great promise.

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9. As discussed more fully below, petitioners have grossly mischaracterized Dr. Brownell's testimony.

- Dr. Soloway testified that Dr. Sweet's team believed that the compound used in the 1960-61 trial was suitable "based on the animal studies that had been done and the distribution studies in patients." JA 2270. Dr. Soloway added that although by 1964, test results had shown that Dr. Sweet's team did not have the right information, in 1960 and 1961, "[w]e thought we did." JA 2332. Plaintiffs' counsel successfully objected to the admission of any statements attributable to Dr. Sweet regarding his expectations for the boron compound's performance at the time the MIT trial was undertaken. *See* JA 2274-75, 2283.

- For his part, Dr. Brownell "believed that the theory and the measurements were entirely adequate at that time for the study to proceed." JA 1874. He had conducted studies to measure the neutron flux as it entered the brain, JA 1983-84, and felt that his physical studies regarding the radiation dose were accurate. JA 2000-01.

- As of October 1961, Dr. Sweet believed that the discouraging results of the MIT trial stemmed from the failure to deliver adequate radiation to tumor cells. JA 3986. Dr. Brownell testified that, as it turned out, the greatest limiting factor was the concentration of boron in blood vessels, but the team did not learn that until later. JA 1894, 2001. It was not until after the MIT clinical trial had ended that neuropathological tests, discussed in the Asbury article, revealed radiation necrosis in healthy cells. JA 0844, 2833-38.

Of course, it is wrong to attribute what was learned later — with the benefit of hindsight and microscopic examination of tissue samples — to the state of knowledge in 1960, when the trials were undertaken. As the court of appeals recognized, articles written after the fact "may sometimes contain probative information about the doctors' state of knowledge before they

begin a set a [sic] medical trials. This is not the case here. Instead, the articles' pertinent information was learned *after* the trials, once the doctors had an opportunity to study and analyze them." Pet. App. 24a. The court rejected petitioners' contention that Dr. Sweet's later writings could be construed as admissions of negligence:

> The plaintiffs also rely on articles and documents written by Dr. Sweet and others on his team after the BNCT trials conducted at MIT, to support the contention that the doctors themselves admitted to wrongdoing, and that these alleged admissions are sufficient to show that Dr. Sweet violated his duty of care to the plaintiffs. . . . No reasonable reader could view the articles, written after the BNCT trials at MIT ended, based on hindsight, and presented to colleagues in science and medicine for consideration, as admissions of wrongdoing. The articles, rather, are objective academic appraisals of the BNCT trials and their failures. The purpose of medical research and trials is to learn from them and improve medical treatments for diseases, including treatment for the subjects of the trials. There would surely be a chilling effect on research in the medical field and deterrence of important progress in medical treatments if doctors and scientists could not frankly assess the successes and failures of their studies in published academic articles so that others can build on their work and learn from it.

Pet. App. 29a-30a.

3. Petitioners Were Required, But Failed, To Proffer Any Evidence That BNCT Hastened The Decedents' Deaths.

Petitioners argue that they were not required to prove that the decedents' deaths were hastened in order to recover on their wrongful death claims. The trial judge instructed the jury,

however, that such proof was required, and the plaintiffs are bound by their agreement to that charge. *See Davis v. Rennie*, 264 F.3d 86, 100 (1st Cir. 2001), *cert. denied*, 535 U.S. 1053 (2002). In any event, the charge was correct.

In Massachusetts, it is the plaintiff's burden in a wrongful death case to show that a wrongful act or omission of the defendant "hastened the death of [the decedent], caused it to occur sooner than it would have happened otherwise." *Walker v. Gage*, 111 N.E. 766, 767 (Mass. 1916); *accord*, *Corriveau v. United States*, 832 F. Supp. 19, 23 (D. Mass. 1993); *Edwards v. Warwick*, 59 N.E.2d 194, 196 (Mass. 1945), and cases cited.

Plaintiffs' only expert testimony on medical causation came from Dr. Junck. He testified, based on the Asbury article, that the cause of death for both Sienkewicz and Heinrich was radiation necrosis caused by BNCT. When asked whether BNCT hastened the death of either, however, he could offer no information:

> Q. But you certainly cannot say that the administration of BNCT in any way hastened [Sienkewicz's] death; is that correct?
>
> A. That's correct.
>
> Q. And . . . you cannot say that the administration of the BNCT in any way hastened George Heinrich's death; is that correct?
>
> A. That's correct.

JA 1129. This was not, then, merely a case in which plaintiffs failed to produce expert testimony that death was hastened. It was worse: plaintiffs' own medical expert testified, affirmatively and without contradiction: "That would be just hypothetical and is just the kind of thing that I would have no basis for saying what would have happened had they not received BNCT and perhaps received some other treatment." JA 1116.

In the course of discussing the jury instructions with counsel prior to the charge, the judge described his intended instruction concerning the wrongful death claims:

> I will explain [that] if they find . . . negligence or lack of informed consent, they may but need not find wrongful death *because they would have to make the additional finding that the life was in fact shortened* as the proximate result of the conduct that they've either characterized as negligent, or from the activities as to which there was no informed consent.

JA 2525 (emphasis added). The next day, the court charged the jury as follows (applying the 1995 version of the Massachusetts wrongful death statute, MASS. GEN. LAWS c. 229, § 2):

> The wrongful death claim measures the damages by . . . the loss to the next of kin; the loss to the family; that loss . . . of companionship and care and the joy of having the person in the family relationship. . . .
>
> [T]hat means you have to shorten the life. . . . [H]ad there been no . . . procedure, the person would have gone downhill, and would eventually then have died of the disease, but because of the procedure they died earlier, then you can award damages to Mrs. Heinrich, and in the Sienkewicz case, to Mr. Sienkewicz. . . .
>
> [I]f the person would have died at the same time anyway, there's no damages under wrongful death, no damages at all.

JA 2610-11. Petitioners' counsel did not object, except to argue that punitive damages could still be awarded without a showing that death was hastened. The judge replied that he was "satisfied with the charge." JA 2619-20

That the district court instructed the jury on hastening in the context of damages, while the appeals court considered it as relating to proximate cause, is a distinction without a difference. The crucial point of the instruction was that if there is no showing that death was hastened, there can be "no damages under wrongful death, no damages at all." Even more to the point, petitioners are asking this Court to delve into the record to determine the correctness of the lower courts' treatment of a facet of state law with which this Court need not be concerned.

C. The Petition Is Rife With Misstatements.

Supreme Court Rule 15 requires that any misstatements in the petition be pointed out in this brief. In accordance with the Rule, and to set the record straight, it should be noted that petitioners have made the following misstatements:

1. On page 6, petitioners suggest that the court of appeals found that they had failed to prove that BNCT caused the decedents' deaths ("the court never mentioned" evidence "that Plaintiffs' deaths were caused by" BNCT). It is hardly surprising that the court of appeals would not bother to mention that radiation necrosis caused by BNCT was the medical cause of death, since that was not disputed in the papers before that court. *See Brief for Defendants-Appellants Elizabeth Dutton Sweet and Frederick H. Grein, Jr., Representatives of the Estate of William H. Sweet, M.D.*, at 17, *Heinrich ex rel. Heinrich v. Sweet*, 308 F.3d 48 (1st Cir. 2002) ("microscopic analysis of brain tissue from fourteen of the MGH-MIT patients" revealed that "the cause of death was 'cerebral in nature': extensive radiation necrosis in nine (including Sienkewicz and Heinrich)"). What the court of appeals found, rather, was that petitioners failed to proffer any evidence "*at all*" that BNCT *hastened* the death of either Heinrich or Sienkewicz. Pet. App. 17a.

2. On page 8, petitioners suggest that the court of appeals mischaracterized the results of the trials, stating that the court of appeals "ignored" evidence "that Defendants administered BNCT at the MIT reactor to eighteen patients, none of whom

survived. Post-mortem examination . . . revealed that nine died, not from cancer, but from radiation necrosis." There has been no dispute about any of these facts. Moreover, to say that the court of appeals ignored such evidence is a misstatement. As the court recognized: "That medical research at times produces results less than hoped for is to be expected. This does not logically lead to the conclusion that the research should not be undertaken." Pet. App. 24a.

3. Petitioners again take liberties with the evidence in footnote 6, on page 9 of their petition:

> In the interest of science, Dr. Sweet was determined to study the brains of the subjects. In the case of George Heinrich, who died at a nursing home, Sweet arrived at the funeral home just before the wake was to start, and persuaded Mrs. Heinrich to let him remove her husband's brain.

In contrast and contradiction to this lurid allegation, Mrs. Heinrich's testimony on the subject was that she did not speak to Dr. Sweet at the funeral home, but consented to an autopsy at the behest of her husband's family. JA 1710-11. It goes without saying that there is nothing diabolical about performing an autopsy when a terminal patient has participated in a clinical trial.

4. On pages 14-15 of their brief, petitioners grossly mischaracterize the evidence (primarily, the testimony of Drs. Soloway and Brownell) regarding what was known about the physics and chemistry of BNCT prior to the MIT trial.[10] It is true that full details concerning the precise biological effect of BNCT on humans were not known; indeed, one of the purposes for which the trials were undertaken was to determine exactly that, with the sincere hope that the answer would cure the patients in the study as well as future glioblastoma patients.

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10. In footnote 9, found on page 15, petitioners claim, apropos of nothing, that BNCT had been conducted on "dozens" of patients in the Brookhaven study. There were ten. JA 2949, 2951.

However, the integrity of petitioners' characterization of the evidence stops there.

Perhaps the most egregious misstatement of all is the following:

> Why did Defendants proceed even though they knew they had no basis to believe BNCT would do more good than harm? In Dr. Brownell's words because "We might as well go ahead and experiment on patients because we weren't going to get an answer to what we didn't know for decades to come."

Pet. Br. at 15. This statement is a fabrication. Dr. Brownell said nothing of the sort.[11]

5. In footnote 14, found on page 22 of their brief, petitioners deride the court of appeals for "ignor[ing]" what they claim constituted "evidence" that Mrs. Sienkewicz had a "variant of glioblastoma with a somewhat better prognosis than the other subjects" and was "without tumor at the time of the BNCT." The so-called "evidence" that they pressed upon the court of appeals consisted mostly of tortured interpretations of selected excerpts of Mrs. Sienkewicz's medical records. They argued below that, "It is a permissible inference that a candidate [Mrs. Sienkewicz] was chosen

11. The portion of the record cited by petitioners, JA 1905-07, is included in the Appendix to this brief, at App. 1a-4a. It is a portion of the transcript of Dr. Brownell's trial testimony under cross-examination by one of the plaintiffs' trial counsel, Mr. Freeman. As may be seen from that transcript excerpt, the only person who used words similar to those that the petitioners attribute to Dr. Brownell was Mr. Freeman, and even he has been misquoted. They formed part of a lengthy, convoluted preamble to a compound question that Mr. Freeman posed, which Dr. Brownell plainly did not adopt as his own testimony. *See* 125 word question beginning with the words, "Head of the nuclear engineering department," and witness's single word response, "No." App. 3a.

to be first who, because she didn't have glioblastoma multiforme, would survive longer, thus creating the aura of a successful experiment." The petitioners did not deign to explain to the court of appeals why such a monstrous inference would be "permissible." Moreover, it was a shabby tactic to argue for that inference, in light of the fact that plaintiffs/petitioners had renounced such an argument during the course of the trial:

> THE COURT: I'm not going to let the plaintiffs argue that Mrs. Sienkewicz, that this was all a terrible misdiagnosis and they killed her with their experiments and there really was nothing wrong with her.
>
> PLAINTIFFS' COUNSEL: No, we're not going to argue that.
>
> THE COURT: Because there's no expert testimony that would support that hypothesis. These people were, I am not going to emphasize it, but these people were terribly sick.

JA 2553-54; *see also* JA 2345. Plaintiffs abided by the trial court's ruling, did not appeal it, should not have argued the point to the court of appeals, and should not continue to make such defamatory arguments.

6. Finally, in support of their negligence argument, petitioners press upon this Court language in *Heinrich V*, in which the district judge stated:

> [T]he Court finds that during the treatment of both Heinrich's and Sienkewicz's decedents, Sweet had actual knowledge of the imprecision of the localization of the boron injections to the

> cancerous brain tissue and the related imprecision of the neutron radiation, with the result that unacceptably high degrees of radiation necrosis were occurring in these and others of his patients. In short, Sweet well knew during his care of his patients that his BNCT treatments were not helping them, and, in fact, were causing severe side effects unrelated to the progressive effect of the fatal brain tumors. He pressed ahead anyway, believing in complete good faith that such experimentation on dying patients held out hope for other cancer victims. However praiseworthy his goal, his conduct with respect to the patients involved here was, as the jury found, negligent.

118 F. Supp. 2d at 90. This finding, while dramatic, is completely unhistorical, and belied by the evidentiary record.

- Eileen Sienkewicz was Patient No. 1. Dr. Sweet could not have known "that his BNCT treatments were not helping" other patients, because none had been treated before Mrs. Sienkewicz. JA 2866, 2977, 3916.

- George Heinrich, treated just two months later, was Patient No. 6. Mrs. Sienkewicz was doing extraordinarily well then; all other patients were alive and showing mixed success. JA 2882, 2977, 3916.

- Eventually, autopsies disclosed radiation necrosis in many patients. When Mrs. Sienkewicz and Mr. Heinrich were treated, however, no autopsies had been performed, because no patient had died. JA 2866, 2977, 3916.

- There simply is not a shred of evidence that Dr. Sweet knew, or had any reason to know, that BNCT was not helping at least some of his patients until long after Mrs. Sienkewicz and Mr. Heinrich were treated. When he did conclude that his patients were doing no better than with conventional treatments, he stopped the BNCT. JA 3915.

The trial judge's description — "experimentation on dying patients" — and his lurid and irrelevant references to "the Tuskeegee Syphilis Study" and "the war crime trials of twenty Nazi physicians," *Heinrich V*, 118 F. Supp. 2d at 91, were thus wholly unsupported in the record. They also were defamatory of the reputation of a pioneer of American medicine who, because of his failing health nearly four decades after the events in issue, was unable to speak in his own defense.

CONCLUSION

The court of appeals applied the correct standard to the district court's denial of the defendants' motions for judgment as a matter of law, and applied that standard correctly to the evidentiary record. As passionately as the petitioners may feel that they were wronged by Dr. Sweet, MGH, and the Court of Appeals for the First Circuit, the simple fact is that they were not. Had the results of the BNCT trials been different, petitioners would be toasting Dr. Sweet's memory, rather than defaming him before this Court. The court of appeals was right to recognize that the bar to be surmounted in a malpractice case cannot and should not be lowered "to compensate for absence of relevant experience, fading memory, or lack of documentary evidence," and that "[c]onclusory opinions, unattached to predicate evidence of existing standards, cannot fairly fill the void." Pet. App. 35a.

For those reasons, and for all of the reasons set forth above, Elizabeth Dutton Sweet and Frederick H. Grein, Jr., as Representatives of the Estate of William H. Sweet, M.D., respectfully request that the petition for a writ of certiorari be denied.

Respectfully submitted,

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APPENDIX

APPENDIX — TRANSCRIPT OF THE EVIDENCE, SEPTEMBER 29, 1999

UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF MASSACHUSETTS
Civil Action No. 97-12134-WGY

EVELYN HEINRICH, ET AL., PLAINTIFFS

v.

WILLIAM H. SWEET, ET AL., DEFENDANTS

VOLUME 11

BEFORE: The Honorable William G. Young,
District Judge, and a Jury

* * *

[JA 1905]

THE COURT: All right, withdrawn. Won't you let them see it though so then we'll —

MR. FREEMAN: He has it before him.

MR. DOHERTY: Can I take a look at that?

MR. FREEMAN: Oh, certainly.

THE COURT: Go ahead.

MR. DOHERTY: Can I just take a look at it, I'll give it back to him, sir.

THE COURT: Go ahead, Mr. Freeman.

MR. FREEMAN: Thank you, Judge.

Q. I want to show you Exhibit 16. This is one that you said, Mr. Doherty, that you had left up here, and I don't see it.

MR. DOHERTY: Let me make sure that I don't have it.

MR. FREEMAN: Here it is. He's got it.

Q. So, I want to — a moment ago, sir, we looked at the November 2nd, 1960 handwritten note. I now want to draw your attention to a document that was just five days before that, October 28th, 1960, Exhibit 16.

Do you have that in front of you, sir?

A. 16?

Q. Yes, sir. I thought I put that in your hand.

A. I have 15.

[JA 1906]

MR. CLIFFORD: It doesn't have a date on the first page.

Q. There it is.

MR. DOHERTY: Oh. The date's on the second page.

Q. Yes, the date is on the second page, but it is an October 28th, 1960 memo from T. J. Thompson to Dr. Manson Benedict and from which Mr. Doherty questioned you extensively.

Appendix

T.J. Thompson was the director of the reactor facility, wasn't he?

A. Yes.

Q. And Manson Benedict was the secretary of the Reactor's Biomedical Advisory Committee, he was the secretary to that committee, right?

A. And head of the department.

Q. And head of the medical department?

A. No, head of the nuclear engineering department.

Q. Head of the nuclear engineering department. Okay. That's fine.

Now, Dr. Thompson wrote, in the third paragraph: It's my general belief, and I believe it's shared by Dr. Brownell, that we know about as much concerning the neutron and gamma ray dose levels as we will know at any time in the next few months. And he went over that. And I think that's where you said we might as well go ahead and **[JA 1907]** experiment on patients because we weren't going to get an answer to what we didn't know for two decades.

In fact, the medical facility, research facility underneath the reactor, after these BNCT experiments were called off in 1961, wasn't used for any human experiments for 28 years or more, was it?

A. No.

Q. Okay. Now, that paragraph that we're looking at right here says — oh, by the way, and if you'll look at the last page, and you don't have to put this one up, the last page of this shows that you were cc'd with a copy of this letter, right?

A. Yes.

Q. All right. So that if there was something in there that was attributed to your belief which you violently, or in any event, in any way disagreed with you would have brought that to somebody's attention, wouldn't you have?

A. Yes.

Q. Okay. So here it says: It's my general belief, and I believe shared by Dr. Brownell, that we know about as much concerning the neutron and gamma ray dose levels as we'll know at any time in the next few months. By far the greatest unknown factor concerns the biological effects of this type of massive dose on boron-containing tissue.

So it's clear that it wasn't even, nobody was in. . . . **[END OF JA 1907]**